PERCEPTUAL PROBLEMS IN THE USE OF ILLUSTRATIVE MATERIALS

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Webster's Third New International Dictionary defines an illustration to be "a picture or drawing or diagram or some other sensory aid that helps make something (as a book, a lecture) clear or more helpful or attractive." Development of illustrative materials for use in the education of blind children, particularly those who are braille readers, long has been a source of concern to teachers and others in the educational field. Scarcely a week goes by at the American Printing House that some inquiry about production of illustrations is not received. The increased use of visual illustrative materials in school texts in recent years has augmented this problem.

This morning the problems of providing illustrative material for braille readers are going to be discussed from several points of view including those of producers and users. However, before this happens, I would like to make some comments on these problems from the view point of one who is interested in the study of human behavior. My comments shall concern illustrations as appropriate forms of communication, legibility of illustrations and their validity.

In the realm of human behavior, the illustration problem falls within that general area of behavior labelled perception. A crude general definition of perception is that it is the

process whereby, through the intermediation of our sensory receptors, we become aware and knowledgeable about our internal and external environments. Illustrations then, should serve this purpose of increasing awareness and knowledge of our internal and external worlds. The type of illustrations possible ~~many~~ in any case will depend on the sensory intermediator employed.

This brings us to a critical problem. Illustrations in print texts are employed and designed for use with ~~usually~~ one particul sensory intermediator - vision. In attacking the problem of translating print books to tactual form the following question is ~~almost invariably~~ usually asked: How can these print illustrations be reproduced in tactual form? May I point out that this is the wrong question? It is wrong because it assumes that the sensory intermediators - vision and touch are equivalent, when indeed they vary tremendously in sensory acuity, perceptual span and other characteristics. The question should be: How can the information involved in the illustration be conveyed to the tactual reader? For a particular set of information, some type of communication other than an ~~illustration~~ embossed page may be more appropriate for conveying the information to the blind reader. In this case, what is sauce for the goose may not be sauce for the gander.

When we attempt to illustrate concepts through two dimensional drawings, graphs or diagrams a host of problems arises. These have as their source ignorance of the dynamics of tactual perception. We have extensive knowledge of the dynamics of

visual perception that has accrued first through developments in field of art and then through prolonged intensive and extensive study of visual perception itself. While many of the laws for visual perception have general application for tactual perception, these processes are not completely parallel qualitatively or quantitatively. Lack of awareness of the disparity between tactual and visual perception often leads us to production of two-dimensional illustrations whose designs are based on our experience with visual illustrative techniques. The result can be an illustration with visual legibility and appeal but with a low degree of tactual legibility. More complete information concerning the dynamics of tactual perception would allow us to avoid this situation. Interest in research in tactual perception appears to be growing and several projects are underway in this area.

We should make sure that in our eagerness to make illustrative materials available to blind children we do not convey erroneous concepts. The classic example of this is when we outline a picture or a photograph of an animal. In the result, the animal may have four, three or two legs depending on its angle to the original observer. If the animal has four legs showing in the original picture, in the embossed tracing two of them may be shorter than the other two since things more distant from the observer are seen as smaller. Use of models as illustrations also courts this difficulty. Models do not accurately partray all sensory dimensions of an object such as height, weight, surface texture, surface temperature, odor and so on. Other informational sources

must be employed to convey these data to the blind user or incomplete or inaccurate concepts may result.

Awareness of these three problems will enable us to more effectively approach solve ~~the solution of~~ the problem of developing illustrative materials for use by the blind.